



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,223	03/25/2004	Manoj Kumar Singhal	15465US01	6554
23446 7590 05/02/2008 MCANDREWS HELD & MALLOY, LTD 500 WEST MADISON STREET SUITE 3400 CHICAGO, IL 60661				
EXAMINER				
HOLDER, ANNER N				
ART UNIT		PAPER NUMBER		
2621				
MAIL DATE		DELIVERY MODE		
05/02/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/809,223

Applicant(s)

SINGHAL, MANOJ KUMAR

Examiner

ANNER HOLDER

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 21 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 4-8 and 15-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 9-14, and 20-21 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 01/09/08 have been fully considered but they are not persuasive. Ritchey teaches the use encoding and decoding of MPEG video it would have been obvious at the time the invention was made that MPEG standards applies to both video of and audio processed with the device of Ritchey. It is suggested in Ritchey specification that several formats are applicable such "NTSC, PAL, SECAM, IDTV, HDTV, or the like" is processed within the device which inherently supports MPEG 1 level 3 or the like. [col. 11 lines 49-54]
2. Applicant's arguments, see page 1, filed 01/09/08, with respect to the rejection(s) of claim(s) 1-21 under 35 USC 102 (b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Ritchey US 5,495, 576 35 USC 103.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 9-14, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritchey US 5,495,576.
5. As to claim 1, Ritchey teaches a method of broadcasting multidimensional virtual reality audio and visual information, [Abstract; Fig. 17; Col. 13 Lines 2-4; Col. 21 Lines 33-58] the method comprising: acquiring audio and visual information from a plurality of acquisition angles

in a three dimensional space; [Fig. 1; Figs. 6-7; Figs. 15-18; Fig. 20; Fig. 24; Abstract; Col. 7 Lines 43-47; Col. 8 Lines 25-44; Col. 9 Lines 46-58; Col. 10 Lines 9-30; Col. 11 Line 31 – Col. 12 Line 19; Col. 12 Line 60 – Col. 13 Line 2] processing the acquired audio and visual information for transmission; [Abstract; Fig. 1; Figs. 6-7; Figs. 15-18; Fig. 20; Fig. 24; Col. 7 Line 55 – Col. 8 Line 25; Col. 9 Lines 46-58; Col. 10 Lines 9-30; Col. 15 Lines 49-50; Col. 16 Lines 10-44] and wherein processing further comprises audio encoding and decoding, wherein audio encoding and decoding comprises MPEG 1 level 3 processes; [Fig. 20; Col. 12 Lines 11-16; Col. 13 Lines 2-23; Col. 32 Lines 37-44; Col. 33 Lines 49-52; col. 11 line 49-54, MPEG is the standard for video and audio compression; it is suggested in Ritchey specification that several formats are applicable such “NTSC, PAL, SECAM, IDTV, HDTV, or the like” is processed within the device which inherently supports MPEG 1 level 3 or the like] receiving the processed audio and visual information; [Figs. 15-22; Abstract; Col. 16 Lines 10-44; Col 17 Lines 40-51; Col. 20 Lines 46-56; Col. 21 Lines 28-37, 47-58; Col 28 Lines 38-49] and projecting the audio and visual information in a multidimensional virtual form from a plurality of projections angles in three dimensional space. [Fig. 19; Col. 30-51; Col. 34 Line 46 – Col. 35 Line 15]

It is clear Ritchey teaches the processing of audio and video data. MPEG is the standard in processing of audio and video information. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made that MPEG processing is applicable.

6. As to claim 2, Ritchey teaches storing the audio and visual information; [Fig. 1 (25a, 25b); Col. 8 Lines 13-17] communicating the audio and visual information via a communication network; [Fig. 1 (20); Figs. 15-23; Col. 17 Line 52 – Col. 18 Line 50] acquiring sound information surrounding and emanating from a subject from a plurality of angles around the

subject; [Fig. 1(8); Figs. 2-7; Figs. 15-16; Col. 8 Lines 25-43; Col. 10 Lines 40-46; Col. 12 Lines 20-32, 52-54, 59-67; Col. 13 Lines 62-67] acquiring visual information surrounding and emanating from the subject, wherein visual information comprises visual features of an entirety of an exterior surface of a subject are acquired multidimensionally; [Fig. 1; Figs. 6-7; Fig 14; Abstract; Col. 10 Lines 40-46; Col. 12 Lines 20-32, 52-54, 59-67; Col. 13 Lines 62-67] and producing a multidimensional surrounding visual representation and a multidimensional surrounding audio representation of a projected subject, wherein the projected subject is identical to a subject from which audio and visual information was previously acquired. [Abstract; Fig. 1; Figs. 15-22; Col. 21 Line 28-58; Col. 22 Lines 26-49; Col. 25 Lines 12-67; Col. 29 Lines 28-31]

7. As to claim 3, Ritchey teaches processing the audio and visual information further comprises: projecting holographic information [Fig. 1; Abstract; Col. 8 Line 50] from a plurality of holographic projector units interact to form a multidimensional virtual reality region through at least one of light propagation, light cancellation, constructive interference, and destructive interference, from a plurality of angles simultaneously; [Figs. 6-7; Fig. 14; Figs. 18-19; Col. 20 Lines 54-56; Col. 28 Line 62 – Col. 29 Line 9; Col. 30 Lines 29-51] and focusing and projecting holographic information to a zone of projection, wherein holographic projection units project holographic information to a location corresponding to an identical location where visual information was captured, creating a multidimensional virtual reality representation of the subject. [Col. 30 Lines 43-51]

8. As to claim 9, Ritchey teaches A method of displaying and projecting multidimensional audio and visual (A/V) information, the method comprising: projecting A/V information into a multidimensional display region, the multidimensional display region comprising a uniform field

of focused projection, [Abstract; Fig. 17; Col. 13 Lines 2-4; Col. 21 Lines 33-58] wherein displaying A/V information further comprises projecting A/V information from a plurality of discrete projection angles located at a plurality of locations in three dimensional space; [Fig. 1; Figs. 6-7; Figs. 15-18; Fig. 20; Fig. 24; Abstract; Col. 7 Lines 43-47; Col. 8 Lines 25-44; Col. 9 Lines 46-58; Col. 10 Lines 9-30; Col. 11 Line 31 – Col. 12 Line 19; Col. 12 Line 60 – Col. 13 Line 2] processing received A/V information, wherein processing received A/V information comprises at least one of decompressing and decoding A/V information, wherein processing A/V information further comprises audio decoding and video decoding, wherein audio decoding comprises MPEG 1 level 3 decoding processes and video decoding comprises MPEG 2 decoding processes; [Fig. 20; Col. 12 Lines 11-16; Col. 13 Lines 2-23; Col. 32 Lines 37-44; Col. 33 Lines 49-52; col. 11 line 49-54, MPEG is the standard for video and audio compression; it is suggested in Ritchey specification that several formats are applicable such “NTSC, PAL, SECAM, IDTV, HDTV, or the like” is processed within the device which inherently supports MPEG 1 level 3 or the like] projecting the A/V information in a multidimensional virtual form into a corresponding multidimensional projection zone; Fig. 19; Col. 30-51; Col. 34 Line 46 – Col. 35 Line 15; Abstract; Fig. 17; Col. 13 Lines 2-4; Col. 21 Lines 33-58] storing A/V information in a plurality of storage media devices; [Fig. 1; Col. 7 Line 55- Col. 8 Line 25; Col. 16 Lines 6-9] and receiving A/V information from at least one communication network. [Fig. 1 (20); Figs. 15-23; Col. 17 Line 52 – Col. 18 Line 50]

It is clear Ritchey teaches the processing of audio and video data. MPEG is the standard in processing of audio and video information. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made that MPEG processing is applicable.

9. As to claim 10, Ritchey teaches displaying the A/V information comprises using an A/V display chamber, wherein the A/V display chamber has a shape comprising at least one of spherical, rectangular, square, and ovoid, and wherein the A/V display chamber is selected from one of a room and a stage. [Fig. 7; Figs. 19-25; Col. 1 Lines 21-25; Col. 10 Lines 31-55; Col. 32 Lines 1-2]

10. As to claim 11, Ritchey teaches processing visual information, wherein processing visual information further comprises at least one of enabling a video display engine to transform the visual information into a video output signal and enabling a holographic display engine to transform the visual information to a holographic output signal; transmitting one of the video output signal to a video projection unit and the holographic output signal to a holographic projection unit; processing audio information and transmitting the audio information via an audio output signal to an audio projection unit; and receiving and projecting one of a combined holographic and audio output signal, a combined video and audio output signal, a separate holographic output signal and audio output signal, and a separate video output signal and audio output signal received from one of the A/V decoding system and a storage system. [Fig. 1; Abstract; Col. 8 Line 50; Figs. 6-7; Fig. 14; Figs. 18-19; Col. 20 Lines 54-56; Col. 28 Line 62 – Col. 29 Line 9; Col. 30 Lines 29-51]

11. As to claim 12, Ritchey teaches receiving and projecting the audio and visual information is performed by a plurality of video projection units for projecting and displaying the video output signal and a plurality of audio projection units for projecting the audio output signal, wherein a plurality of A/V display units are distributed around an interior surface of an A/V display chamber. [Fig. 14; Fig. 19; Fig. 23; Abstract; Fig. 17; Col. 13 Lines 2-4; Col. 21 Lines

33-58; Col. 7 Lines 43-47; Col. 8 Lines 25-44; Col. 9 Lines 46-58; Col. 10 Lines 9-30; Col. 11 Line 31 – Col. 12 Line 19; Col. 12 Line 60 – Col. 13 Line 2]

12. As to claim 13, Ritchey teaches further comprising focusing and directing audio information and projected holographic information upon a center region of the A/V display chamber producing a multidimensional surrounding visual and multidimensional surrounding audio representation of a projected subject. [Abstract; Col. 30 Line 29 – Col. 32 Line 20]

13. As to claim 14, Ritchey teaches projecting holographic information from a plurality of holographic projector units forming a multidimensional virtual reality region through at least one of light propagation, light cancellation, constructive interference, and destructive interference, arriving from a plurality of angles around an entirety of the A/V display chamber simultaneously; [Figs. 6-7; Fig. 14; Figs. 18-19; Col. 20 Lines 54-56; Col. 28 Line 62 – Col. 29 Line 9; Col. 30 Lines 29-51] focusing and projecting the holographic information from a plurality of discrete angles and overlapping zones of projection; [Col.30 Lines 29-51] projecting holographic information to the zone of projection via a plurality of holographic projection units, wherein the holographic projection units project holographic information to a location creating a multi-dimensional virtual reality representation of a subject; [Abstract; Col. 30 Lines 29-51] and playing received audio information via a plurality of audio playback units, each of the audio playback units comprising at least one speaker, the audio playback units focusing and projecting audio information to create a multidimensional virtual audio representation of a subject's sound information and speech. [Col. 7 Lines 43-49; Col. 8 Lines 26-44; Fig. 17; Fig. 1; Fig. 5; Col. 20 Lines 10-31]

14. As to claim 20, Ritchey teaches A multidimensional virtual reality audio and visual (A/V) system comprising: an A/V capture system for acquiring audio and visual information from a multidimensional acquisition zone; [Fig. 1; Figs. 6-7; Figs. 15-18; Fig. 20; Fig. 24; Abstract; Col. 7 Lines 43-47; Col. 8 Lines 25-44; Col. 9 Lines 46-58; Col. 10 Lines 9-30; Col. 11 Line 31 – Col. 12 Line 19; Col. 12 Line 60 – Col. 13 Line 2] an A/V encoding system, the A/V encoding system processing the acquired A/V information for transmission, [Fig. 20; Col. 12 Lines 11-16; Col. 13 Lines 2-23; Col. 32 Lines 37-44; Col. 33 Lines 49-52] and wherein processing further comprises audio encoding and decoding, wherein audio encoding and decoding comprises MPEG 1 level 3 processes; [Fig. 20; Col. 12 Lines 11-16; Col. 13 Lines 2-23; Col. 32 Lines 37-44; Col. 33 Lines 49-52; col. 11 line 49-54, MPEG is the standard for video and audio compression; it is suggested in Ritchey specification that several formats are applicable such “NTSC, PAL, SECAM, IDTV, HDTV, or the like” is processed within the device which inherently supports MPEG 1 level 3 or the like] an A/V decoding system, the A/V decoding system processing received audio and visual information; and an A/V display system, the A/V display system projecting the audio and visual information in a multidimensional virtual form to a corresponding multidimensional projection zone. [Fig. 20; Col. 12 Lines 11-16; Col. 13 Lines 2-23; Col. 32 Lines 37-44; Col. 33 Lines 49-52]

It is clear Ritchey teaches the processing of audio and video data. MPEG is the standard in processing of audio and video information. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made that MPEG processing is applicable.

15. As to claim 21, Ritchey teaches a plurality of storage media devices for storing audio and visual information the storage media devices for storing audio and visual information comprising

at least one of a stationary storage device and a mobile storage device, the A/V system being communicatively coupled to at least one communication network, the A/V information being communicated between one of the A/V encoding system, the A/V decoding system, and at least one of a plurality of storage media devices for storing audio and visual information, the A/V capture system and the A/V display system being one of located at different geographic locations and co-located at a plurality of different geographic locations, additional A/V information is combined with acquired A/V information from the A/V receiver units, the additional A/V information comprises at least one of music, graphs, pictures, tables, documents, and backgrounds, [Col. 10 Lines 32-53] the A/V decoding system processing received A/V information further comprises audio decoding and video decoding, the audio decoding comprising MPEG 1 level 3 decoding processes and the video decoding comprising MPEG 2 decoding processes, [Fig. 20; Col. 12 Lines 11-16; Col. 13 Lines 2-23; Col. 32 Lines 37-44; Col. 33 Lines 49-52; col. 11 line 49-54, MPEG is the standard for video and audio compression; it is suggested in Ritchey specification that several formats are applicable such “NTSC, PAL, SECAM, IDTV, HDTV, or the like” is processed within the device which inherently supports MPEG 1 level 3 or the like] the A/V decoding system further comprising a video display engine transforming the visual information into a video output signal, the video output signal being transmitted to a video projection unit, the A/V decoding system further comprising a holographic display engine transforming the visual information into a holographic output signal, the holographic output signal being transmitted to a holographic projection unit, the A/V decoding system further comprising transforming the received audio information into an audio output signal and transmitting the audio output signal via at least one communications network, the

audio output signal being transmitted to an audio projection unit, the audio output signal and one of a video output signal and a holographic output signal being transmitted one of combined together and separately, the A/V display system receiving one of a combined holographic and audio output signal, a combined video and audio output signal, a separate holographic and audio output signal, and a separate video and audio output signal from one of the A/V decoding system [Fig. 1; Figs. 6-7; Fig. 14; Figs. 18-19; Col. 20 Lines 54-56; Col. 28 Line 62 – Col. 29 Line 9; Col. 30 Lines 29-51] and a media storage device, [Fig. 1; Col. 7 Line 55- Col. 8 Line 25; Col. 16 Lines 6-9] the A/V display system comprising an A/V display chamber, the A/V display chamber having a shape comprising one of spherical, rectangular, square, and ovoid, [Fig. 7; Figs. 19-25; Col. 1 Lines 21-25; Col. 10 Lines 31-55; Col. 32 Lines 1-2] and the A/V display chamber further comprises one of a room and a stage, the A/V display chamber comprising a plurality of video projection units for projecting the video output signal and a plurality of audio projection units for projecting the audio output signal, the A/V display chamber comprising a plurality of A/V display units distributed around an interior surface of the A/V display chamber, audio information and holographic information being directed and focused upon a center region of the A/V display chamber producing a multidimensional surrounding visual representation and a multidimensional surrounding audio representation of a projected subject, the projected subject being identical to a subject from which the A/V information was previously captured in an A/V capture chamber, projected holographic information from a plurality of holographic projector units interact forming a multidimensional virtual reality region through at least one of light propagation, light cancellation, constructive interference, and destructive interference, arriving from a plurality of angles around an entirety of the A/V display chamber simultaneously, [Figs.

6-7; Fig. 14; Figs. 18-19; Col. 20 Lines 54-56; Col. 28 Line 62 – Col. 29 Line 9; Col. 30 Lines 29-51] the projected holographic information being focused and projected from a plurality of angles and zones of projection identically as acquired A/V information that was captured from respective corresponding angles and zones of acquisition by the A/V receiving units of the A/V capture chamber, the A/V display unit comprising a plurality of holographic projection units projecting holographic information to the zone of projection, the holographic projection units project holographic information to a location corresponding to an identical location in the A/V capture chamber where visual information was captured, and creating a multidimensional virtual reality representation of the subject, [Fig. 1; Figs. 6-7; Fig. 14; Figs. 18-19; Col. 20 Lines 54-56; Col. 28 Line 62 – Col. 29 Line 9; Col. 30 Lines 29-51] the A/V display unit comprising a plurality of audio playback units, the audio playback units comprising at least one speaker, the audio playback units projecting audio information to an identical location in the A/V display chamber where the corresponding audio information was acquired in the A/V capture chamber, the plurality of audio playback units being focused to project audio information creating a multidimensional virtual audio representation of a subject's sound information and speech. [Col. 7 Lines 43-49; Col. 8 Lines 26-44; Fig. 17; Fig. 1; Fig. 5; Col. 20 Lines 10-31]

It is clear Ritchey teaches the processing of audio and video data. MPEG is the standard in processing of audio and video information. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made that MPEG processing is applicable.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hsieh et al. US 5,883,640; Owen et al. US 6,414,996.

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANNER HOLDER whose telephone number is (571)270-1549. The examiner can normally be reached on M-Th, M-F 8 am - 3 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ANH 04/28/08

/Tung Vo/
Primary Examiner, Art Unit 2621